



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,914	04/18/2001	Sam Heidari	VELCP010X1	8857
28436	7590	07/12/2005	EXAMINER	
IP CREATORS			ZHENG, EVA Y	
P. O. BOX 2789				
CUPERTINO, CA 95015			ART UNIT	PAPER NUMBER
			2634	
DATE MAILED: 07/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,914

Applicant(s)

HEIDARI ET AL.

Examiner

Eva Yi Zheng

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-9 and 17-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US 5,742,527) in view of Bloy et al. (US 4,695,825).

a) Regarding claims 1 and 17, Rybicki et al. disclose a ADSL transceiver (Fig. 3) configured to couple to a communication medium to communicate frequency division multiplexed upstream and downstream portions of at least one multi-tone modulated communication channel thereon, and the ADSL transceiver comprising: a digital signal processor (DSP) (11 in Fig.4).

Rybicki et al. disclose all the subject matters above except for the specific of an XDSL transceiver instead of ADSL transceiver. In addition, the DSP is configured to select a processing interval inversely corresponding with bandwidth availability on the communication medium.

It is well known that ADSL and XDSL are the two types of digital subscriber lines (DSL). xDSL is similar to ISDN in as much as both operate over existing copper telephone lines (POTS) and both require the short runs to a central telephone office.

ADSL, Asymmetric digital subscriber line, a new technology that allows more data to be sent over existing copper telephone lines (PTOS). It is obvious to one of ordinary skill in art to realize that to use XDSL in Rybicki et al. is merely a matter of design choice.

Bloy et al. disclose an analog to digital conversion system. When utilized with DSP system, Bloy et al. states that: "brings about overall cycle times of markedly reduce interval for enhancing processing rates and increasing bandwidth" (Col 1, L54-64). This clearly indicates the inverse relationship of the processing interval, rate and bandwidth. Therefore, it is obvious to one of ordinary skill in art to implement the A/D system of Bloy et al. with the DSP system of Rybicki et al. By doing so, provide increasing Nyquist frequency, and eliminating waste periods during operation of communication in a system.

b) Regarding claims 2 and 18, Rybicki et al. disclose the transceiver further comprising:

an digital-to-analog converter (DAC) (118 in Fig. 4) communication medium and performing a digital-to-analog conversion of the at least one multi-tone modulated communication channel at a fixed sample rate; and

an interpolator (110 in Fig. 4) the DSP to the DAC.

The inverse relationship of the processing interval, rate and bandwidth has clearly stated in Bloy et al.

Art Unit: 2634

c) Regarding claims 3 and 19, Rybicki et al. disclose the transceiver further comprising:

an analog-to-digital converter (ADC) (203 in Fig. 12) ommunication medium and performing a analog-to-digital conversion of the at least one multi-tone modulated communication channel at a fixed sample rate; and

a decimator (205 in Fig. 12) coupling to ADC and to the DSP (212 in Fig. 12).

The inverse relationship of the processing interval, rate and bandwidth has clearly stated in Bloy et al.

d) Claim 4 is rejected under similar reasons as claim 1.

e) Regarding claim 5, Rybicki et al. disclose the DSL transceiver of Claim 1, wherein the DSP supports modulation and demodulation of the at least one multi-tone modulated communication channel in a plurality of multi-tone protocols (as shown in Fig. 4 and 12).

f) Regarding claims 6 and 20, Rybicki et al. disclose the DSL transceiver further comprising:

an digital-to-analog converter (DAC) (118 in Fig. 4) coupled to the DSP and the communication medium and the DAC performing a digital-to-analog conversion of the at least one multi-tone modulated communication channel at a fixed sample rate; and

an analog-to-digital converter (ADC) (203 in Fig. 12) coupled to the communication medium and the DSP and ADC performing a analog-to-digital conversion of the at least one multi-tone modulated communication channel at a fixed sample rate.

The inverse relationship of the processing interval, rate and bandwidth has clearly stated in Bloy et al.

g) Regarding claim 7, Rybicki et al. disclose the DSL transceiver of Claim 1, further comprising:

the DSP (212 in Fig. 12), and

a scheduler (inherent as 210 in Fig. 12) coupled to the DSP to schedule processing therein of the plurality of multi-tone modulated communication channels based on criteria including the associated processing intervals for each of the plurality of multi-tone modulated communication channels.

h) Regarding claim 8, Rybicki et al. disclose the DSL transceiver of Claim 1, wherein the communication medium comprises one of a wired and a wireless medium (as shown in Fig. 3).

i) Regarding claim 9, Rybicki et al. disclose the DSL transceiver of Claim 1, further comprising:

at least one analog front end (AFE) (16 and 18 in Fig. 1) coupled between the communication medium and the DSP for performing analog-to-digital and digital-to-analog conversion of the at least one multi-tone modulated communication channel.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2634

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Zheng whose telephone number is 571 272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2634

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Zheng
Examiner
Art Unit 2634

July 11, 2005



**SHUWANG LIU
PRIMARY EXAMINER**